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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,504	06/26/2001	Yoshitaka Sasaki	109764	1118

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EXAMINER

CAO, ALLEN T

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 08/06/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/888,504

Applicant(s)

SASAKI, YOSHITAKA

Examiner

Allen T Cao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 19-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9-18 is/are objected to.
- 8) ☒ Claim(s) 1-43 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/26/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Claims 19-43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected claims, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 6/17/04.
2. Applicant's election with traverse of Group I in the reply filed on 6/17/04 is acknowledged. The traversal is on the ground(s) that "the subject matter of all claims 1-43 is sufficiently related that a 'thorough' search for the subject matter of any one Group of claims would encompass a search for the subject matter of the remaining claims ... the entire application could be made without serious burden". This is not found persuasive because inventions I (Claims 1-18, drawn to a thin film magnetic head apparatus, classified in class 360, subclass 126) and II (Claims 19-43, drawn to a method of manufacturing a thin film magnetic head, classified in class 29, subclass 603.1+) are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the thin film magnetic head of group I can be made by different method different to "etching", "flattening", "polishing", etc... as set forth in group II. Therefore, the Examiner maintains that the inventions are distinct, each from the other because these inventions are distinct for the reasons given above and have acquired a separate status in the art as

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shown by their different classification, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

he invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakashima et al (US. 5,224,002).

Nakashima et al (US. 5,224,002) disclose a thin film magnetic head B having a first magnetic layer 13 and a second magnetic layer 14 which are magnetically coupled to each other and have two magnetic poles (two pole tips of the two magnetic layers) facing each other with a gap layer 10 in between near and in a recording medium facing surface to be faces with a recording medium (inherently, figure 1 shows that two magnetic poles facing each other with a gap layer 10 in between near and in a recording medium facing surface to be faced with a recording medium); and a thin film coil 22 provided between the first and second magnetic layers with an insulating layer 20 in between, the first magnetic having a predetermined magnetic layer portion including a uniform width portion which extends away from the recording medium facing surface and determines a write track width on the recording medium (figure 1 shows that the predetermined magnetic portion having same width from one end to other end); wherein the predetermined magnetic layer portion includes a first magnetic film 13a and

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a second magnetic film 13b which are located apart from and close to the gap layer, respectively, and both the first and second magnetic films are made of a magnetic material having a magnetic flux density of 1.5 Tesla or more (column 4, lines 44-46 and lines 60-62; and column 6, lines 18-19 as set forth in claim 1.

Regarding claim 2, Nakashima et al disclose that at least one of the first and second magnetic films is made of either an alloy containing at least nickel and iron or iron nitride (column 3, lines 25-28).

Regarding claim 3, Nakashima et al disclose that the alloy containing nickel and iron further contains at least cobalt (column 3, lines 48-50).

Regarding claim 7, Nakashima et al disclose that an interface between the first and second magnetic film is flat.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al.

Nakashima et al do not disclose that the at least one of the first and second magnetic film is made of a material containing an amorphous alloy (claim 4); or that the amorphous alloy is an alloy made of cobalt and iron, an oxide of an alloy made of zirconium, cobalt and iron, or a nitride of an alloy made of zirconium and iron (claim 5);

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and or that the first magnetic film is made of an alloy containing at least nickel, iron and cobalt, and the second magnetic film is made of either an alloy containing at least nickel and iron or an alloy made of cobalt and iron (claim 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to manufacture the thin film magnetic head of Nakashima et al with the at least one of the first and second magnetic film is made of a material containing an amorphous alloy (claim 4); or that the amorphous alloy is an alloy made of cobalt and iron, an oxide of an alloy made of zirconium, cobalt and iron, or a nitride of an alloy made of zirconium and iron (claim 5); and or that the first magnetic film is made of an alloy containing at least nickel, iron and cobalt, and the second magnetic film is made of either an alloy containing at least nickel and iron or an alloy made of cobalt and iron (claim 6).

The rationale is as follows: One of ordinary skill in the art would have been motivated to make the thin film magnetic head of Nakashima et al with the at least one of the first and second magnetic film is made of a material containing an amorphous alloy (claim 4); or that the amorphous alloy is an alloy made of cobalt and iron, an oxide of an alloy made of zirconium, cobalt and iron, or a nitride of an alloy made of zirconium and iron (claim 5); and or that the first magnetic film is made of an alloy containing at least nickel, iron and cobalt, and the second magnetic film is made of either an alloy containing at least nickel and iron or an alloy made of cobalt and iron (claim 6) through lab routine experimentation and reasonable optimization to improve the material characteristics in order to improve read/write characteristics of the magnetic head.

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Additionally, it has been held to be within the general skill of a worker in the art to select a known material having different chemical bonding structures on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416 (CCPA 1960).

Regarding claim 8, Nakashima et al disclose that an interface between the first and second magnetic film is flat.

7. Claims 9-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record neither discloses nor suggests the thin film magnetic head having combination limitations of all limitations structural as claimed in claim 1 and additional limitations of "wherein a first nonmagnetic layer pattern, which extends in such a manner that the rearward portion thereof is coupled to the insulating layer and the front edge thereof terminates at a predetermined position at the front of the recording medium facing surface, is provided between the second magnetic layer and the second magnetic film" as set forth in claims 9 and 11.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US006510025B2, US006137652A, US006731460B2, US005739991A and Japanese reference (10-269524).

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen T Cao whose telephone number is (703) 305-3796. The examiner can normally be reached on Mon - Thurs (7:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen Cao
Primary Examiner

AC
August 3, 2004